Jejunogastric Intussusception: *

Review of 4 Cases—Diagnosis and Management

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JEJUNOGASTRIC intussusception is a potentially lethal complication of gastric surgery.[3] It is a variant of the *postgastrectomy syndrome* and is probably encountered with relative frequency but unrecognized. The disorder has been reported sporadically since 1914—more than 150 cases. The four cases reported here illustrate acute and chronic forms of the lesion.

Case Reports

Case 1. A Billroth II gastric resection with antecolic anastomosis was performed in 1941 for duodenal ulcer disease. Thereafter, at irregular intervals and without apparent precipitating cause the patient had bilious vomiting and moderately severe epigastric distress. The attacks would begin and end abruptly. In 1962 a gastrointestinal x-ray series was normal. In August 1964 on the day that he was hospitalized for right ureteral colic, he abruptly vomited gastric contents and later vomited a liter of bright red blood. There was epigastric tenderness but no palpable mass. Blood transfusions and nasogastric suction were started and an upper gastrointestinal x-ray series showed an intussusception (Fig. 1). Operation was performed 20 hours after the vomiting. Three feet of efferent loop jejunum forming a jejuno-jejunogastric intussusception were reduced from the stomach with considerable difficulty. The released segment was edematous and congested but did not require resection. Six months after operation the patient remains asymptomatic.

Comment. This patient gave a 23-year history of intermittent postgastrectomy distress typical of *chronic intermittent* intussusception. Roentgenograms 2 years previously while the patient was asymptomatic were normal. Incarceration of the intussusceptum developed during an attack of renal colic with vomiting and is classified as *acute* intussusception.

Case 2. The patient had a chronic duodenal ulcer for 9 years and in 1946 vagotomy, antrectomy and anterior gastrojejunostomy were done. A Hollander test in 1958 indicated complete vagotomy. He was seen repeatedly and hospitalized several times for vomiting and epigastric pain. In 1964 he was admitted because of vomiting and epigastric pain that was unrelieved by antacids. The vomitus contained bile but no blood. He was thought to have a marginal ulcer. An upper gastrointestinal x-ray series demonstrated a jejunogastric intussusception (Fig. 2). He was discharged without operation.

Comment. An 18-year history of intermittent vomiting after gastric operation was attributed to alcoholic gastritis and marginal ulcer. The correct diagnosis was made by radiographic examination.

Case 3. Gastric resection with a large anterior Polya anastomosis was done for bleeding duodenal ulcer. Three weeks after operation the patient had colicky right upper quadrant and periumbilical pain accompanied by vomiting and nausea. After six such attacks, each relieved by "an injection," he was admitted to the hospital for diagnostic studies. An upper gastrointestinal x-ray series and cholecystogram were normal. At gastroscopy a segment of jejunum was seen herniating back and forth through the stomal opening. There was no ulceration. The attacks subsided spontaneously and 3 years later the patient died of a myocardial infarction. On examination of the digestive tract at autopsy no abnormality could be found.

Comment. Episodes of *early postoperative* intussusception spontaneously vanished with only general supportive care. The di-

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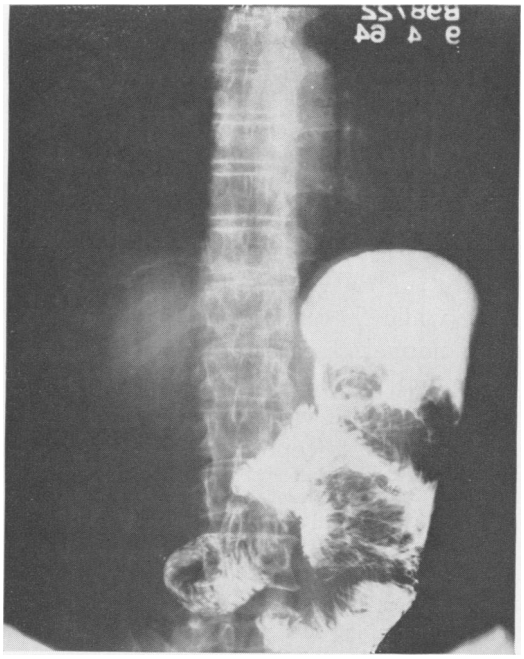

FIG. 1. Radiograph demonstrating jejunogastric intussusception in Case 1.

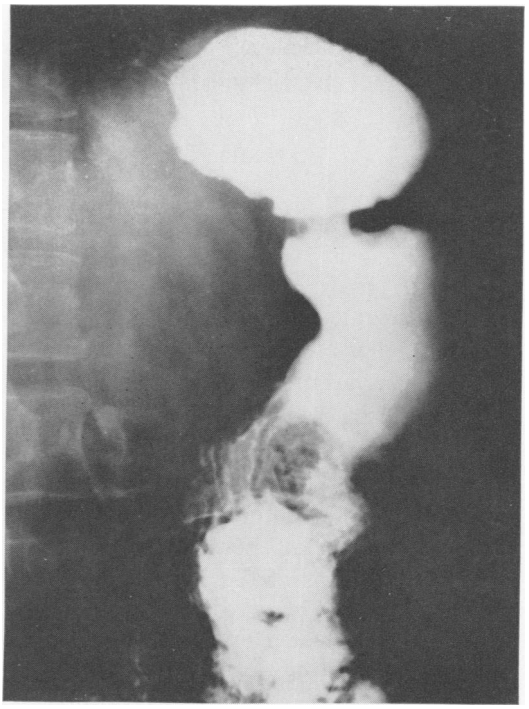

FIG. 2. Radiograph demonstrating jejunogastric intussusception in Case 2.

agnosis was made on the basis of gastroscopy. Characteristically no explanation of the intussusception could be found at autopsy.

Case 4. Gastric resection with a Polya antecolic gastrojejunostomy was done for duodenal ulcer perforation and subsequent pyloric obstruction. Thereafter, the patient had several attacks suggestive of marginal ulceration. Several upper gastrointestinal x-ray series did not show a marginal ulcer. The patient had some relief on medical management. Five years later after heavy lifting he suddenly developed cramping abdominal pain which was different from his ulcer pain. He vomited small amounts of blood. These symptoms recurred on several occasions. Six years after the initial procedure marginal ulcer and jejunogastric intussusception were demonstrated by x-ray (Fig. 3). At operation, a 1.5-cm. ulcer at the margin of the gastroenterostomy was found. Secondary gastric resection was performed. The patient had a complicated postoperative course and died.

Comment. Combined disease—intussusception and marginal ulcer—is an unusual combination. No anatomic abnormality is found causing intussusception.

Diagnosis

Jejunogastric intussusception can occur in any patient who has had a gastrojejunostomy. The diagnostic triad consists of 1) high intestinal obstruction, 2) a left hypochondriac mass and 3) hematemesis. Each of these signs may follow in progression. Paroxysms of nausea and vomiting of gastric contents occur initially. Gradually, the vomiting becomes "coffee grounds" and then bright red bleeding supervenes. Severe abdominal pain may be present. On abdominal examination there may be left upper quadrant tenderness and guarding, and occasionally a mass may be felt. Often the mass is concealed by the rib cage and the guarding. Because the lesion is intraluminal, there is no peritoneal irritation and ileus is a late sign. A simple barium x-ray study will identify an incarcerated jejunogastric intussusception.

The chronic, intermittent lesion is self-

reducing and self limited. It can be identified only by gastroscopy or upper gastrointestinal x-ray series which, if done at the onset of an attack, will often demonstrate the lesion.[9]

Radiographic Signs

A striated filling defect of the stomach is pathognomonic of intussusception of small intestine into the stomach. The appearance arises from a collection of contrast material between the folds of Kerkring of the jejunum. The pattern varies with the type of intussusception and convolutions in the loop. The lesion is not always possible to demonstrate and suggestive associated findings are 1) afferent loop barium re-entering the stomach, 2) gastric retention, dilation or delayed emptying, 3) displacement of the pylorus (if present) to the right and 4) duodenal loop dilation with stenosal peristalsis. The gastroenterostomy stoma is not seen and there is no evacuation through it.

Management

Obstruction can be treated nonoperatively with good results.[5] The treatment of incarcerated jejunogastric intussusception is early operation. Mortality rates rise with delay in operation—10 per cent within 48 hours and more than 50 per cent thereafter.[6] Incarcerated intussusception can usually be reduced by compression of the stomach as opposed to traction on uninvolved small bowel. Gastrotomy or resection is rarely required. Reduction may result in tears in the intussusceptum.[7] Usually, jejunum can be released without injury. Repair or resection is unnecessary even when massive bleeding has occurred. An effort to determine the etiology of the intussusception should be made.

Four courses of action are available.

Non-operative Management. This is justified when there is no evidence of vascular compromise, shock, hematemesis, peritoneal signs or prolonged obstruction. There have been, however, several reports of abrupt decline and death when incarceration was neglected.[2] Good results have followed sedation, nasogastric suction and effect of the weight of barium and fluoroscopic manipulation. Some cases undoubtedly are undiagnosed and vanish on nonspecific therapy. Early postoperative intussusception does not require surgical treatment. There are no reports of incarceration associated with early postoperative intussusception.

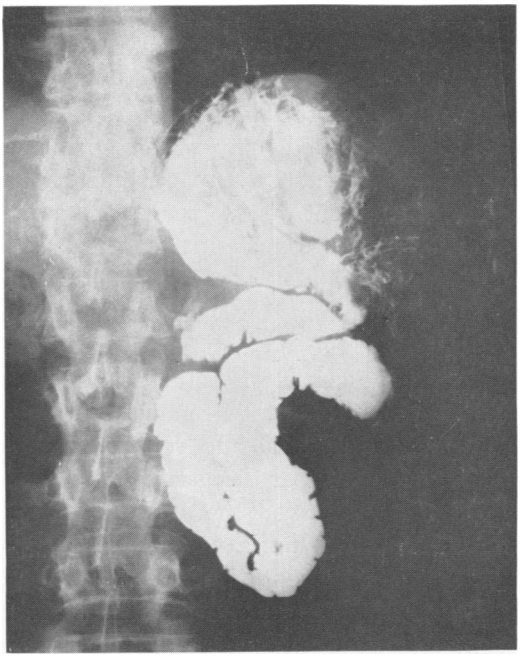

FIG. 3. Radiograph demonstrating jejunogastric intussusception in Case 4.

Operative Reduction Alone. This is satisfactory in a patient who has had no previous difficulty, whereas after frequent attacks simple reduction is unsatisfactory. One case of recurrence after surgical reduction is reported[1] and at the second operation a 10-cm. segment of jejunum was resected. The result was evidently satisfactory. In the early postoperative period disordered motility patterns return to normal.

Revision of Anastomosis. This may mean converting a Polya-type anastomosis to a Hofmeister type, moving an antecolic anastomosis to a retrocolic position, or changing

a Billroth II to a Billroth I type anastomosis. Baumann [1] resected a short segment of efferent loop. Gastroduodenostomy is the most effective procedure. These operations are recommended only when there has been significant, recurrent difficulty or when concurrent disease such as marginal ulcer or peptic esophagitis makes revision imperative.

Local Fixation. Tuschka [8] plicated the mesentery of the jejunum in the area of the intussusception and his patient experienced no further difficulty. This maneuver is simple and safe and should reduce mobility of the jejunum near the gastroenterostomy. Jääskeläinen [4] sewed the efferent and afferent loops together for a short distance to prevent intussusception of either loop.

Emergency operation for incarcerated acute intussusception should be confined to reduction of the intussusception, resection of nonviable bowel, and stabilizing the loop by suturing it to adjacent mesentery of the colon. Correction of chronic intussusception should be by conversion to a Billroth I gastroduodenostomy; alternatively, a new retrocolic anastomosis should be made with suture of the efferent loop to the mesentery of the transverse colon.

Discussion

Efferent loop intussusception is most common.[6] Variations such as afferent, efferent, combined and jejuno-jejunogastric intussusception occur without discernable anatomic cause. A disorder of motility rather than a technical feature is assumed to be the cause. No type of gastrojejunostomy or anastomosis is free of the hazard but antecolic anastomoses are most susceptible. Surgical treatment can not be assessed on the basis of short term followup. Intussusception requiring operation may occur after long intervals from initial operation.

One of the characteristics of this disease is that early postoperative incidents usually abate spontaneously, never to return. Acute episodes may be remote from the initial operation and preciptated by straining or vomiting (Case 1).

Summary

Four cases of jejunogastric intussusception are reported, illustrating immediate postoperative, acute and chronic forms of the complication. Indications for surgical intervention are 1) intermittent episodes that cause discomfort or incarceration with strangulation and 2) the acute incarceration with strangulaton. Simple surgical reduction is acceptable treatment but does not alter the anatomic situation so as to prevent recurrence; several surgical approaches to the problem are outlined.

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